APPENDIX D

Model Logical System Architecture

D.1 Model Logical System Architecture (Example)

The model Logical System Architecture illustrated in the following pages is provided as Contractor information only to complement the core system specifications. These diagrams encompass both card-based and conventional fare payment. Where these diagrams conflict with the specifications, the specifications shall take precedence.

The following sections identify the role of the system architecture, and provides information to assist with interpretation of the model system architecture diagrams.

D.1.1 System Architecture Role

The role of the system architecture is to provide a framework for development of system design and implementation details. The architecture describes the fundamental functionality required in a systematic and visual fashion using diagrams, as a complement to the core specification requirements. The architecture diagrams represent more general requirements than the specifications, and provide a “picture” of the system.

D.1.2 Logical Architecture Diagrams

The logical architecture defines exchanges between users and functional system processes. There are two types of logical architecture diagrams presented - context diagrams and subsystem diagrams.

The logical architecture diagrams show the users (as defined below) as circles with thicker borders, and processes as circles with thinner borders (boldface labels distinguish the higher level subsystem processes). Connections between the circles show information or other exchanges, using arrowheads to indicate the direction of the exchange. The functional processes in these diagrams do not correspond with any particular physical system components.

For the purposes of these diagrams, users are defined as including:

- Customers.
- Operators (bus, rail and ferry toll booths).
- Agencies.
- Agency client organizations (employers, university, etc.).
- The Clearinghouse.

Other categories of users (e.g., customer service personnel, participating retailers, Clearinghouse staff, etc.) are not shown in these diagrams. Their roles are internal to the processes, as documented in the subsystem specifications.

D.1.2.1 Context Diagrams

The context diagrams summarize the general linkages between users and the system processes. Context diagram connections have been left unlabelled for the sake of clarity. The system context diagram conveys the overall linkages between the users and higher level subsystem processes.

Context diagrams are provided for:

- Overall system context
- Clearinghouse context
- Customer context.

D.1.2.2 Subsystem Diagrams

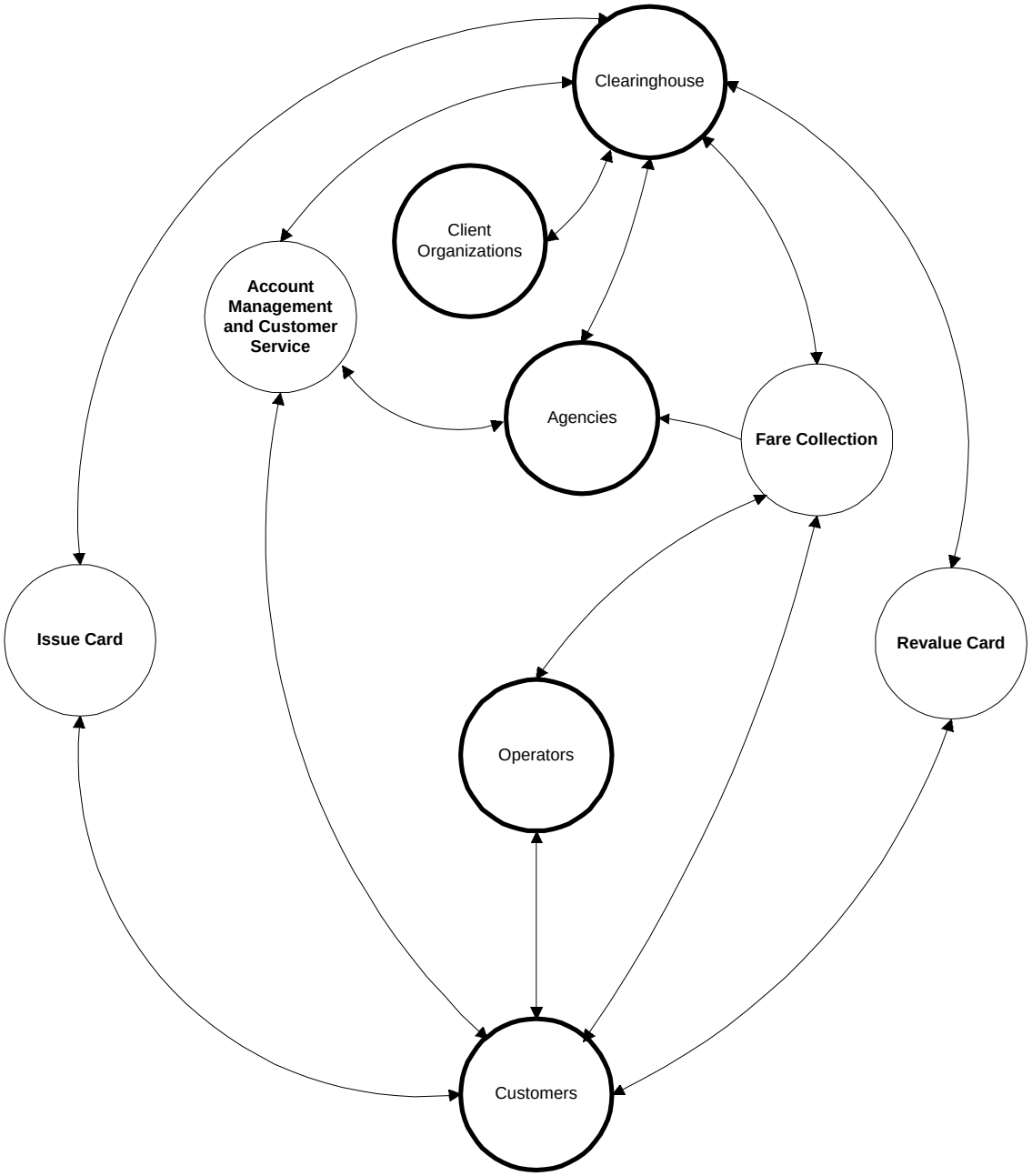
Exchanges are labeled in the subsystem diagrams (although simple acknowledgement messages have been left out). To avoid a proliferation of arrows, multiple exchanges in the same direction between two circles are often consolidated into a single arrow (with a label including multiple elements separated by semicolons). Many-to-one linkages use open-ended connections for clarity. The types of exchanges include:

- Physical movements of fare cards being distributed prior to issuance.
- The presentation of fare cards by customers for use with the system.
- Information and instructions.
- The flow of funds.
- The flow of data, fare transactions, revalue transactions or system records.

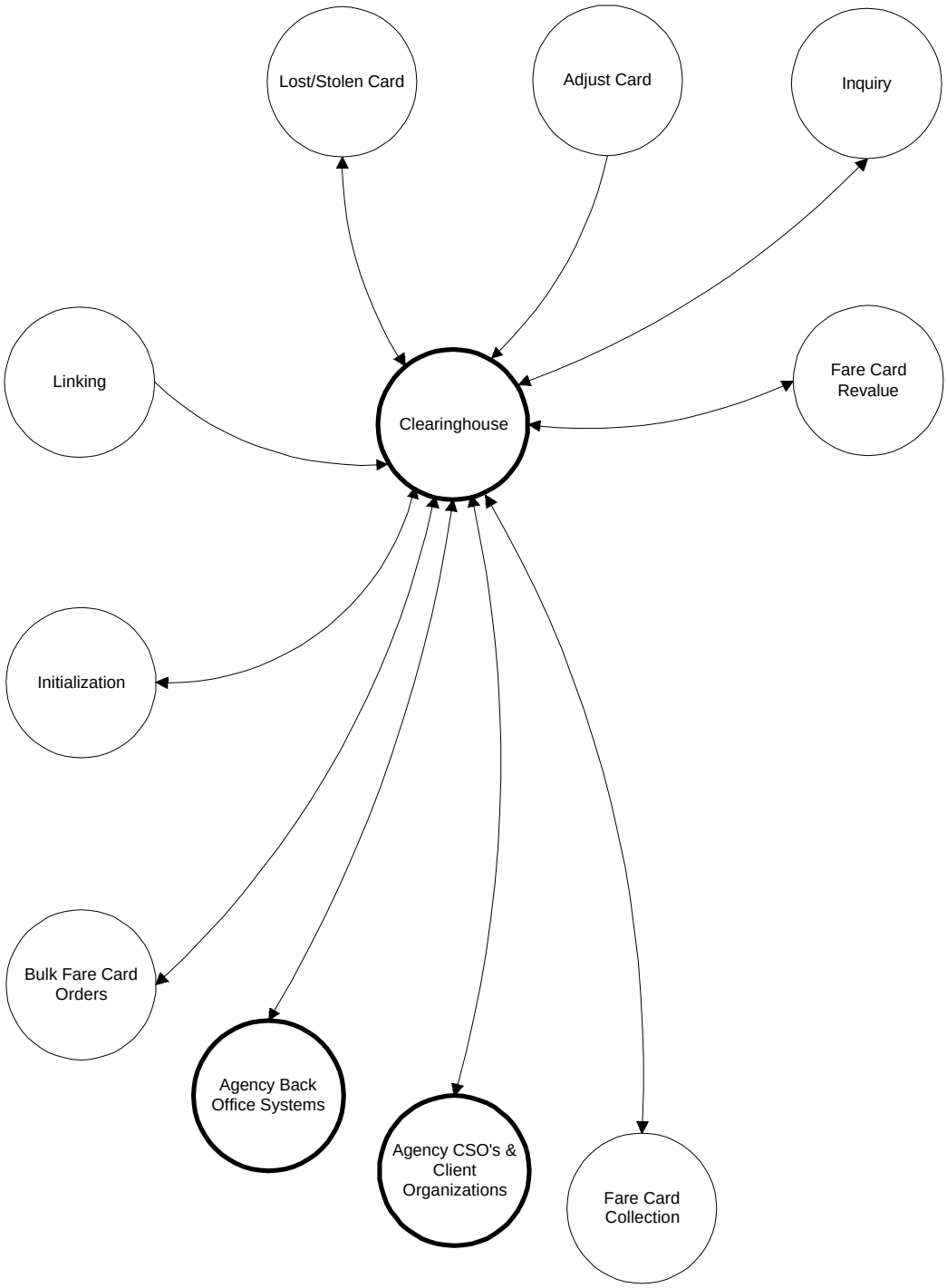
Model subsystem logical diagrams are provided for:

- The fare card issuing subsystem.
- Account management and customer service.
- Fare collection.
- Fare card revaluing
- Data exchanges between major RFCS entities.

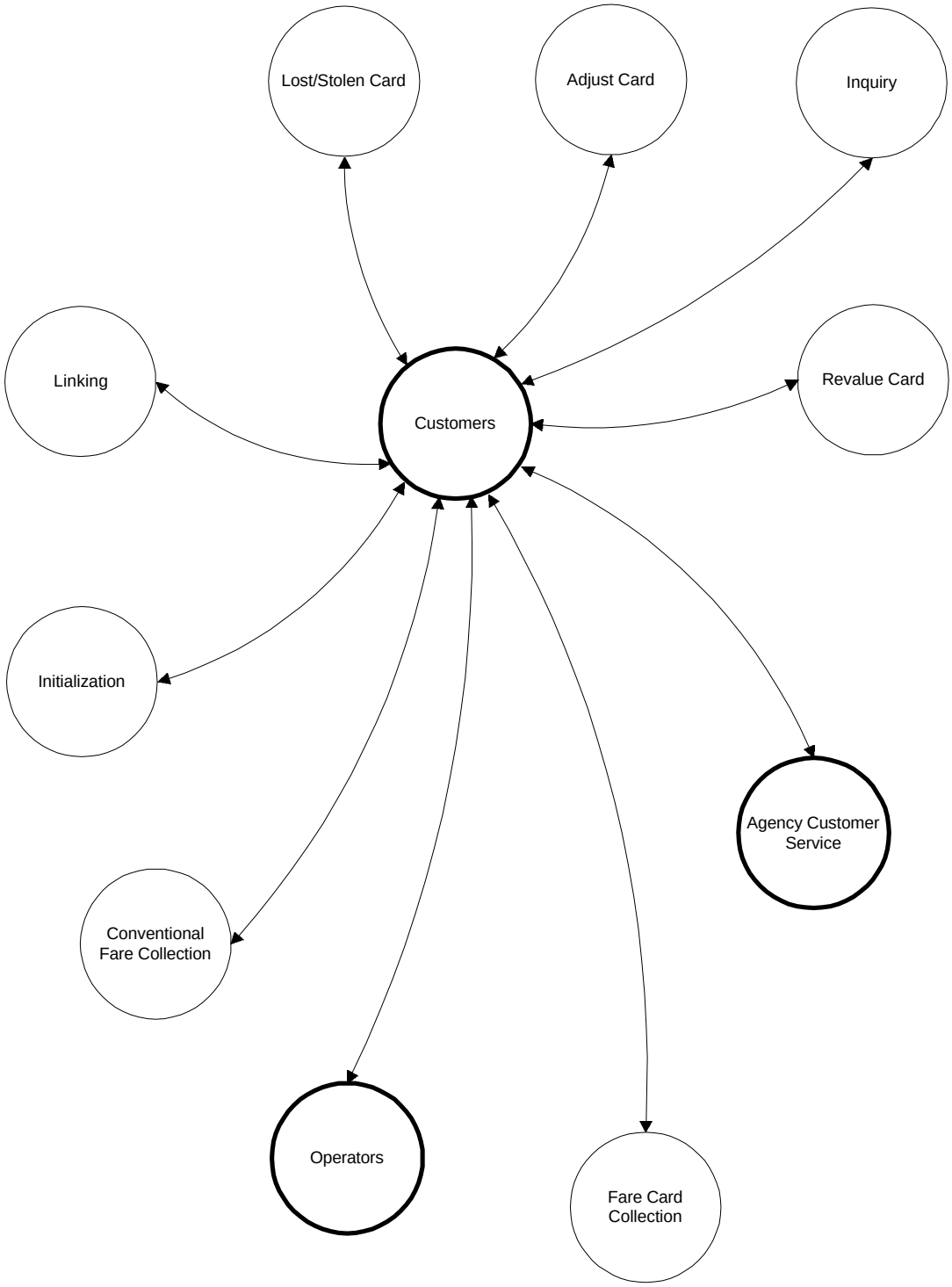
Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
System Context Diagram



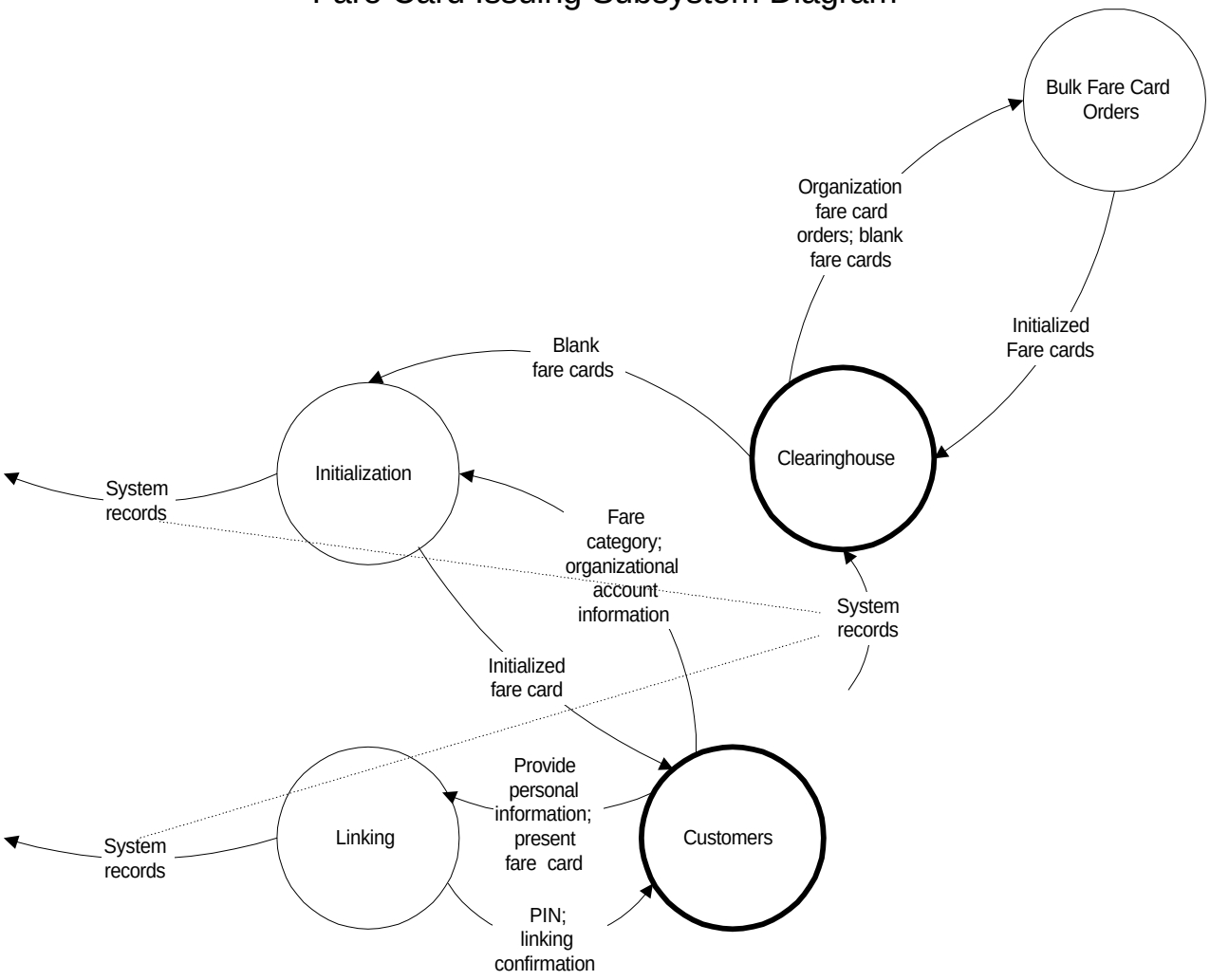
Puget Sound Regional Fare Coordination System
Logical Architecture
Clearinghouse Context



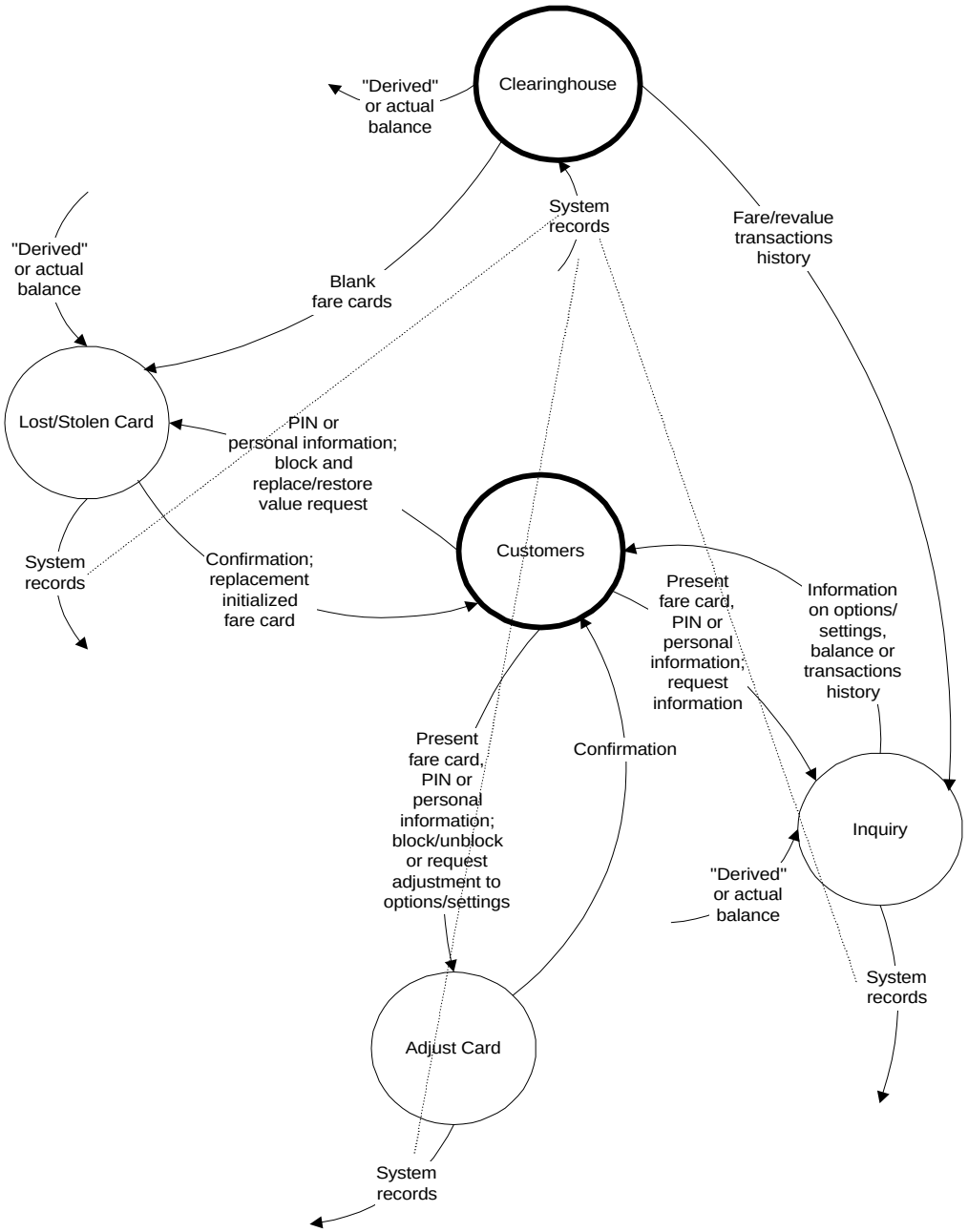
Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Customer Context Diagram



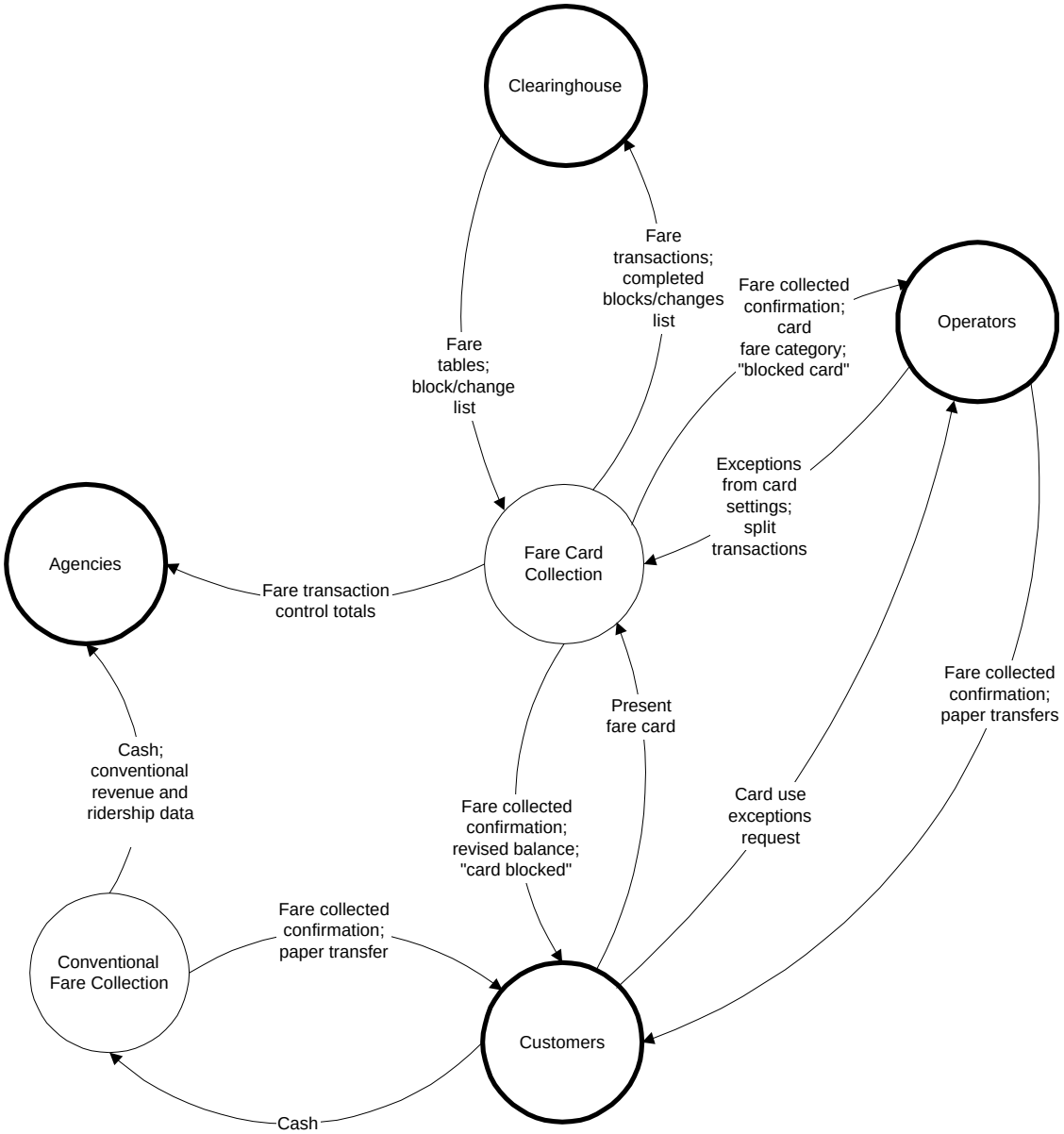
Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Fare Card Issuing Subsystem Diagram



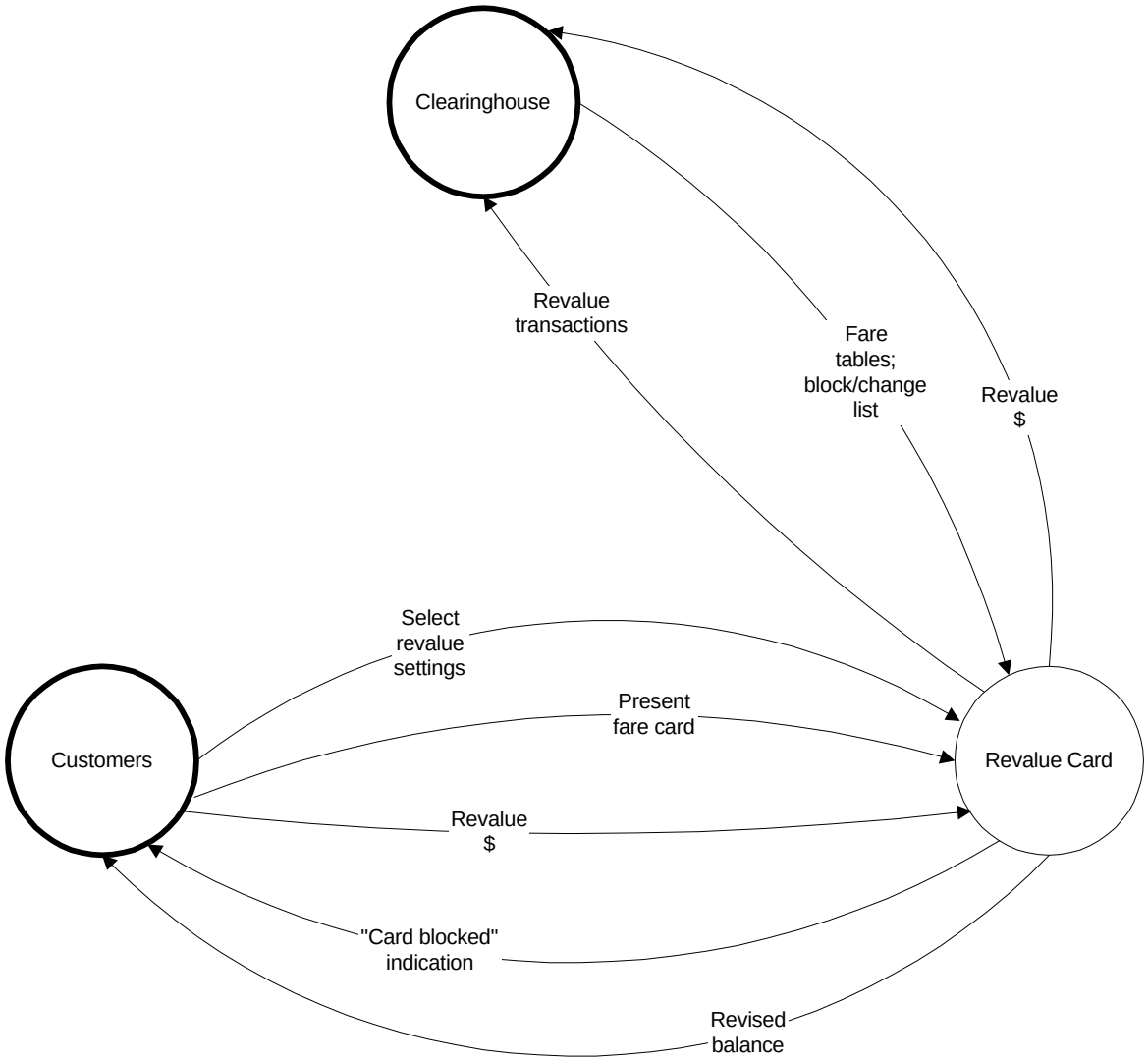
Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Account Management and Customer Service Subsystem Diagram



Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Fare Collection Subsystem Diagram



Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Fare Card Revaluing Subsystem Diagram



Puget Sound Regional Fare Coordination System
Model System Architecture
Logical Architecture
Data Exchanges Diagram Between Clearinghouse, Agencies and Organizations